

NASA TIGR

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Innovation in America in the 21st Century *Maximizing Technology Transfer*

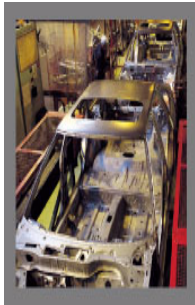
Bruce P. Mehlman

Assistant Secretary for Technology Policy

U.S. Department of Commerce



Technology Transfer in America, 2003



“[Our technology transfer system] is the worst in the world *EXCEPT* for all the others that have been tried so far.”

Every other developed economy is trying to copy our success.



The Wealth of Nations is Changing *Change Dynamics*

GLOBALIZATION

COMPLEXITY

***Innovative capacity
is the key driver of
future national
prosperity.***

**DISRUPTIVE
TECHNOLOGIES**

**ACCELERATING
CHANGE**



The Role of Labs & Tech Transfer?: *The Questions*



- Is tech transfer still valued or valuable?
- Can labs still be good partners in today's speed-to-market, global world?
- Are labs fully aware-of and maximizing their intellectual capital?
- Do we need to change or fix the tech transfer laws and policies?



NEEDED:

Realistic Expectations

Industry Misconceptions

- **“Tech transfer is easy; pots of gold”**
- **“Tech transfer is impossible; red tape reigns”**
- **“Labs’ role is to serve industry and promote economic growth.”**

Lab Misconceptions

- **“Industry can survive at government speed.”**
- **“Industry needs the labs and will always wait.”**
- **“Industry is aware of labs’ capabilities and resources.”**



Industry-Lab Tech Transfer

What's Working Well

- Labs' outstanding research endeavors bring unique tools and talents.
- People-based tech transfer.
- 50-year history of close partnerships and transferred technology (e.g. NIH).





Industry-Lab Tech Transfer *What Needs Improvement*

- Resources, Incentives & Empowerment for lab tech transfer professionals.
- Better Knowledge Management through online databases.
- Improved *Outcome* Metrics so we measure what we value.
- Reduced Administrative Burdens, consistent terms & conditions.



Industry-Lab Tech Transfer ***Inherent Conflicts***

Cultural (Speed, Pressure)

Science Mission (Basic R vs. Applied D)

National Interests (Security, Control)

Public Interest vs. Private Interest (IPR)



Long-Term Challenges for Industry-Lab Partnering & Tech Transfer

Will it get harder?

PEOPLE:
**COMPETING
GLOBALLY
FOR THE BEST
& BRIGHTEST**

FUNDING:
**ENTITLEMENT
OVERHEAD,
CONSISTENCY
OF MISSIONS**

COMPLEXITY:
**FUTURE
TECHNOLOGIES &
PARTNERSHIPS
EVEN HARDER!**

COMPETITION:
**ALTERNATIVES TO
LABS GROWING IN
NUMBER &
QUALITY**



Innovation in America

Reasons for Hope



White House photo by Eric Draper

- **Unprecedented federal investments in R&D will keep innovation engines greased.**
- **Significant efforts are under way to improve outcome metrics, ORTA education & knowledge management.**
- **Technology Transfer frameworks are fundamentally sound.**

U.S. Department of Commerce



OFFICE OF
TECHNOLOGY
POLICY



Why Innovators Move Offshore

- 
- A stylized world map is visible in the background of the list, showing the continents in green and blue oceans. The map is centered on the Atlantic Ocean, with North and South America on the left and Europe and Africa on the right.
- **Lower Costs (Researchers, Facilities)**
 - **Talent (Researchers, Foreign Clusters)**
 - **Market Access**
 - **Financial incentives (e.g. tax rebates)**
 - **Host nation infrastructure (new labs, Us)**
 - **Easier Regulations (environmental, labor)**
 - **More favorable IPR terms (with partners)**
 - **Proximity to Offshore Manufacturing**



Why Innovators Stay Here

- Talent (Researchers, Universities, Lab partners, immigrants)
- Best business climate (competition, market-based, low tax, manageable regulation, easy access to capital)
 - Best IP Protection (best patent office, best IPR enforcement)
 - Biggest Market in the World (consumer, military, government)
- Rule of Law, Political Stability, Honest Government, Transparency
- Culture fit (entrepreneurship, welcoming innovation, meritocracy)
- Best Quality of Life (democracy, freedoms, clean environment, schools)
 - Best Infrastructure (transportation, energy, telecom)
 - Unmatched National commitments & investments in R&D
- Tradition, national pride, cost of exporting

by Eric Draper